

### AMENDMENTS TO THE CLAIMS

1. **(Previously Presented)** A method for incorporating nucleic acid segments into cellular nucleic acid of an isolated mammalian target cell, the method comprising the step of:

delivering into the mammalian target cell an *in vitro* assembled Mu transposition complex that comprises (i) MuA transposases and (ii) a transposon segment that comprises a pair of Mu end sequences recognised and bound by MuA transposase and an insert sequence between said Mu end sequences, wherein the transposon segment is integrated by transposition into the cellular nucleic acid of said target cell and the integration is mediated by MuA only.

2. (Original) The method according to claim 1, wherein said Mu transposition complex is delivered into the target cell by electroporation.

3. (Original) The method according to claim 1, wherein the nucleic acid segment is incorporated to a random or almost random position of the cellular nucleic acid of the target cell.

4. (Original) The method according to claim 1, wherein the nucleic acid segment is incorporated to a targeted position of the cellular nucleic acid of the target cell.

5. (Original) The method according to claim 1, wherein the target cell is a human cell.

6. **(Previously Presented)** The method according to claim 1, wherein said mammalian target cell is a mouse cell.

7. (Original) The method according to claim 1, wherein said insert sequence comprises a marker, which is selectable in mammalian cells.

8. **(Previously Presented)** The method according to claim 1, wherein a fraction comprising Mu transposition complexes is concentrated and desalted from Mu transposition complex assembly reactions and is delivered into the target cell.

9. (Original) The method according to claim 1 further comprising the step of incubating the target cells under conditions that promote transposition into the cellular nucleic acid.

10. **(Previously Presented)** A method for forming an insertion mutant library from a pool of mammalian target cells, the method comprising the steps of:

a) delivering into a mammalian target cell an *in vitro* assembled Mu transposition complex that comprises (i) MuA transposases and (ii) a transposon segment that comprises a pair of Mu end sequences recognised and bound by MuA transposase and an insert sequence with a selectable marker between said Mu end sequences, wherein the transposon segment is integrated by transposition into the cellular nucleic acid of said target cell and the integration is mediated by MuA only; and

b) screening for cells that comprise the selectable marker.

11. **(Cancelled).**